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NAVIGATION LIGHTS FOR LARGE SEA-GOING POWER-DRIVEN VESSELS

PART I POSITIONING AND SCREENING OF LIGHTS

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NAVIGATION LIGHTS FOR LARGE SEA-GOING POWER-DRIVEN VESSELS

PART I POSITIONING AND SCREENING OF LIGHTS

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NAVIGATION LIGHTS FOR LARGE SEA-GOING POWER-DRIVEN VESSELS

PART I POSITIONING AND SCREENING OF LIGHTS

0. FOREWORD

0.1 This Indian Standard (Part I) was adopted by the Indian Standards Institution on 15 May 1968, after the draft finalized by the Marine Instruments and Safety Aids Sectional Committee had been approved by the Mechanical Engineering Division Council.

0.2 Navigation lights are to be carried and exhibited by sea-going power-driven vessels in all weathers from sunset to sunrise. These lights may also be exhibited from sunrise to sunset in restricted visibility and in all other circumstances when it is deemed necessary.

0.3 This standard is one of a series of Indian Standards on navigation lights for use on board large sea-going vessels.

0.4 This standard is based on the International Regulations for Preventing Collisions at Sea.

0.5 This standard generally incorporates the requirements under the Merchant Shipping Act, 1958 and the rules made thereunder and in addition general requirements and testing of navigation lights for large sea-going power-driven vessels is subject to the approval by the Government of India under the said Act and Rules.

0.6 This standard is necessary since navigation lights have to be so fixed, positioned and screened that each of the lights concerned is projected in the direction required by the International Regulations for Prevention of Collisions at Sea, and is not obstructed by fittings, such as derricks housed vertically.

0.7 This standard is meant to act as guidance to shipbuilders, shipowners and others concerned with the fitting and use of navigation lights.

0.8 For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS : 2-1960*. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

1. SCOPE

1.1 This standard (Part I) lays down the details for the positioning and screening of navigation lights.

2. TERMINOLOGY

2.0 For the purpose of this standard, the following definitions shall apply.

2.1 Power Driven Vessel — Every vessel under power, whether under sail or not shall be considered as a power driven vessel.

2.2 Large Power Driven Vessel — A power driven vessel of length 19·8 m and above shall be referred to as a large power driven vessel.

2.3 Height Above the Hull — This refers to the height above the uppermost continuous deck.

2.4 Length and the Breadth — The length and breadth of a vessel shall refer to her overall length and largest breadth.

2.5 Navigation Lights — This term used in this standard covers both electric and oil lamps or lanterns.

2.6 Chock — The free end of the inboard screen for side lights, whether of wood or steel, is provided with an end beading of wood. This end beading is referred to as chock. Chock ends are shaved to obtain the necessary ‘ thwartship value ’.

3. POSITIONING AND SCREENING OF MASTHEAD LIGHTS

3.1 The masthead lights shall be placed at a height above the hull of not less than 6·1 m and if the breadth of the vessel exceeds 6·1 m then at a height above the hull not less than such breadth. However, this light need not be placed at a greater height above the hull than 12·2 m. The height of the after masthead lights shall not be less than the height of the forward mast light above keel plus 4·6 m (*see* Fig. 1).

3.2 Where the length of the power driven vessel is 46 m or above, a second masthead light shall be fitted in accordance with **3.3**.

3.3 Where a second masthead light is also required to be fitted, the two masthead lights shall be so placed in a line with and over the

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*Rules for rounding off numerical values (*revised*).

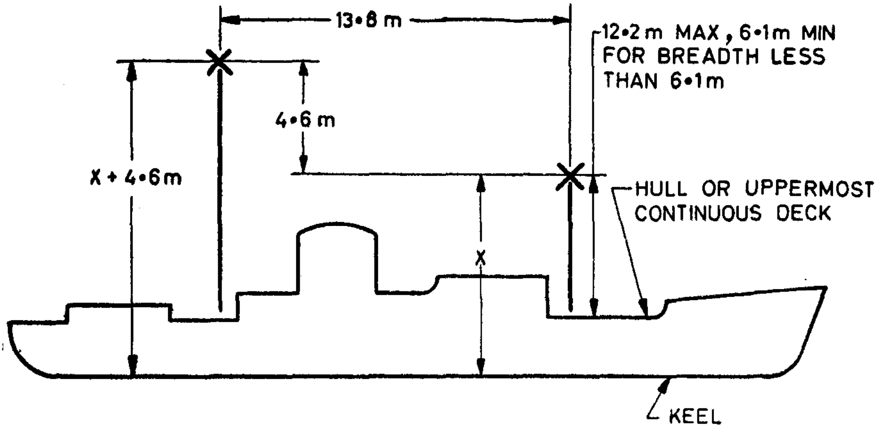

13•8 m
12•2 m MAX, 6•1m MIN FOR BREADTH LESS THAN 6•1m
4•6 m
X + 4•6m
X
HULL OR UPPERMOST CONTINUOUS DECK
KEEL

FIG. 1 POSITIONING OF MASTHEAD LIGHTS

keel that one shall be at least 4·6 m higher than the other and in such a position that the forward light shall always be positioned lower than the after one.

3.4 The horizontal distance between these two masthead lights shall be not less than 3 times the difference between the vertical heights of the masthead lights.

3.5 If sails are carried, it shall be ensured that the lights will not be obstructed when the sails are set.

3.6 Masthead Light — Oil Lamps — Wick or wicks of an oil masthead lantern shall be at right angles to the line of the keel and their setting shall be such that the line drawn from the centre of the after edge of the wick (the forward wick, if a duplex burner is used) in a direction 22°30′ abaft the beam on either side, shall cut the edge of the housing of the lens as shown in Fig. 2.

3.7 Masthead Light — Electric Lamps — The lamps of an electric masthead lantern shall be so placed that a line drawn in a direction 22°30′ abaft the beam on either side, being a tangent to the forward half of a circle 16 mm in diameter and concentric with lamp socket, shall cut the edge of the housing lens or plain glass front. The centre of the lamp socket shall be 8 mm abaft the centre from which the curvature of the lens or plain glass front is assessed as shown in Fig. 3.

3.8 Where two masthead lights cannot be carried exactly over the centre line of the keel, they may be placed slightly to one side of the

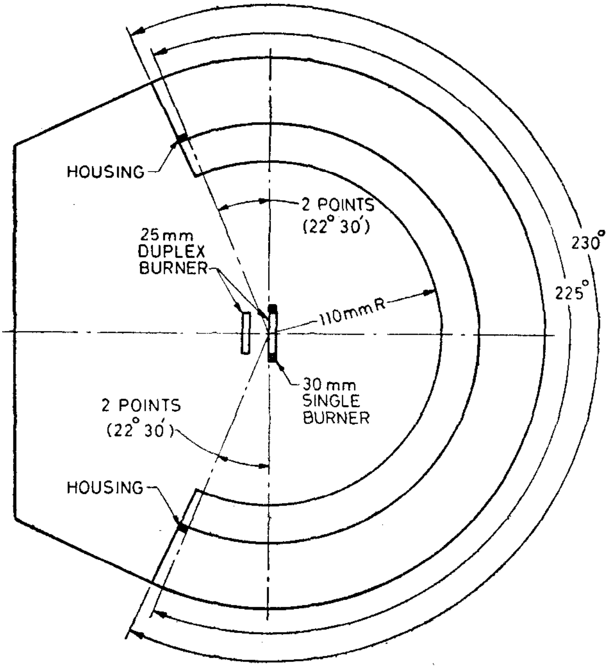


FIG. 2 SCREENING OF MASTHEAD LIGHT — OIL LAMPS

centre line (not exceeding 1/20th of the breadth of the ship), provided they are in a vertical plane parallel with the hull and are so placed that the lights can be seen 22°30′ abaft the beam on each side of the ship.

4. POSITIONING AND SCREENING OF SIDE LIGHTS

4.1 The green and red side lights shall be fitted on the foremost parts of the bridge ends, wherever applicable.

4.2 The starboard side light shall be the green light and the port side light shall be the red light.

4.3 The green and red side lights shall be fitted with inboard screens projecting at least 0·91 metres forward from the light so as to prevent these lights from being seen across the bow.

4.4 The inboard screen may be of wood or steel.

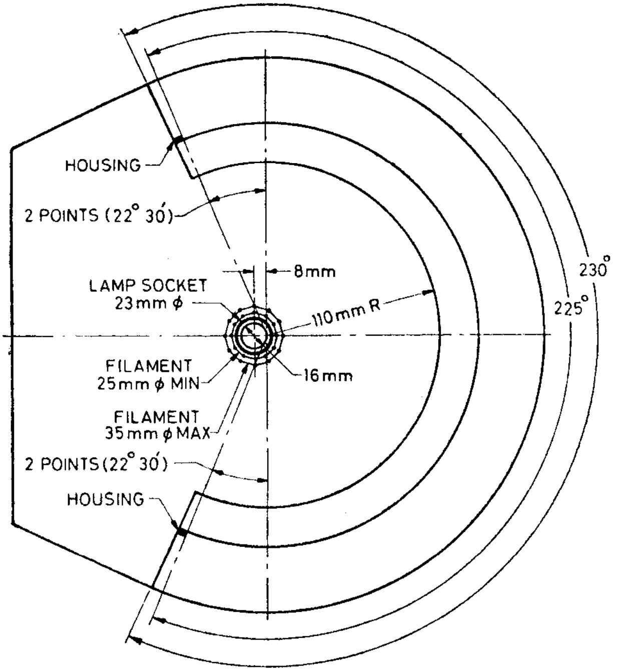


FIG. 3 SCREENING OF MASTHEAD LIGHT — ELECTRIC LAMPS

4.5 If the inboard screen is made of wood, the wood used shall be well seasoned and not less than 30 mm in thickness.

4.6 If the inboard screen is made of steel, the chock of same should still be made of wood so that the width of the chock can be adjusted.

4.7 The shape of the side light shall be as shown in Fig. 4.

4.8 Screening Abaft the Beam with Oil Lamps — The wick or wicks of an oil side lantern shall be placed at an angle of 112°30′ with the fore-and-aft line of the ship; in other words they shall be parallel to the direction 22°30′ abaft the beam. The burner shall be so placed that a line drawn in this direction from the after edge of the wick (the forward wick if a duplex burner is used) shall cut the edge of the housing of the lens (*see* Fig. 5).

4.9 Screening Abaft the Beam with Electric Lamps — The lamp socket of an electric side lantern shall be so placed that a line drawn in a direction 22°30′ abaft the beam, being a tanget to the forward half of a

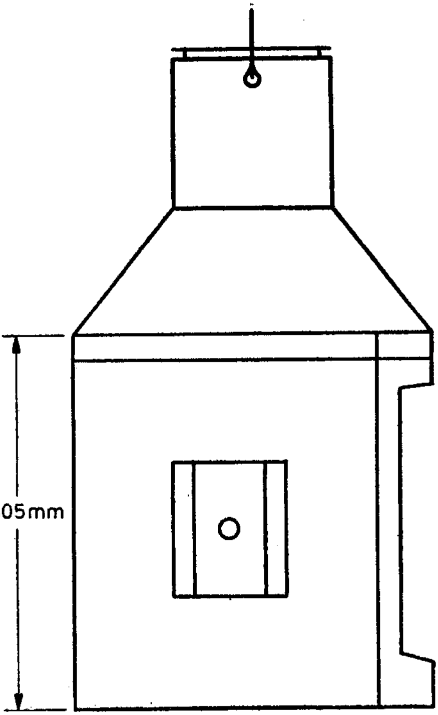
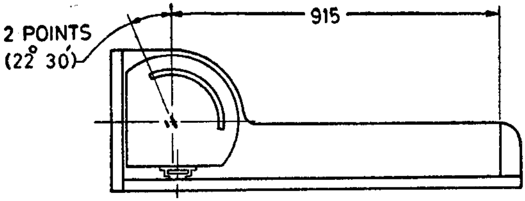


FIG. 4 SHAPE OF SIDE LIGHT

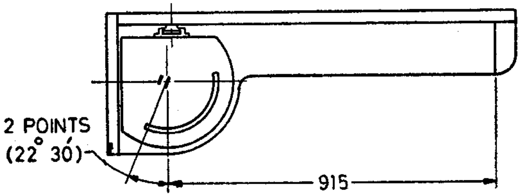
circle 16 mm in diameter and concentric with the lamp socket, will cut the edge of the housing of the lens or plain glass front. The centre of the lamp socket shall be 8 mm abaft the centre from which the curvature of the lens or plain glass front is struck (*see* Fig. 6).

4.10 Screening Forward — The screen of a side lantern, whether oil or electric, shall not be less than 915 mm in length from the flame (or filament, if an electric lamp is used) to the chock or its equivalent, and shall always be placed parallel to the line of the keel. The chocking shall be so arranged to show a ' thwartship value ' of at least 25 mm of wick (or filament) in a forward direction; that is to say, a person looking past the edge of the chock in a line parallel to the keel shall be able to see at least 25 mm of wick (or filament).

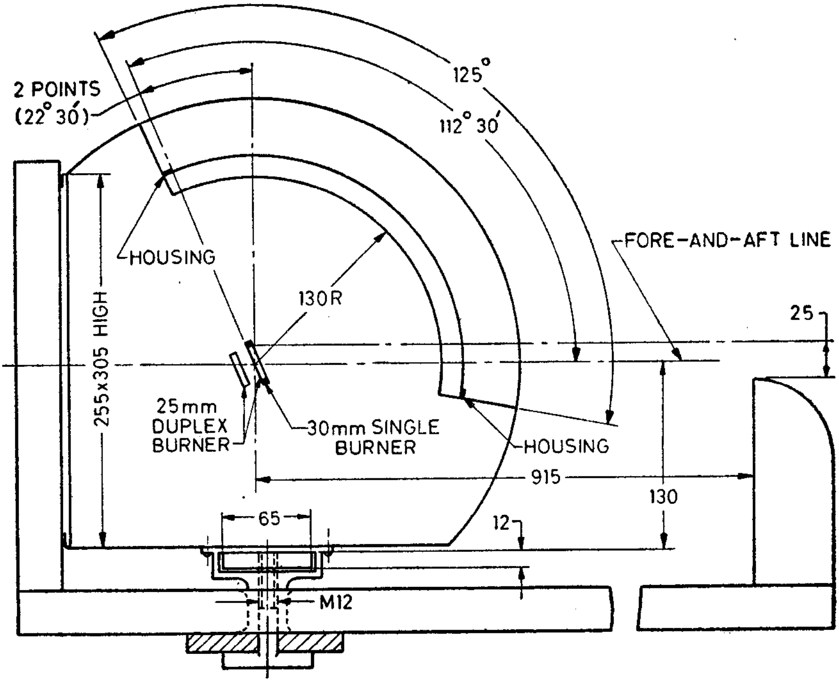
4.11 Separate inboard screen (with proper chocks) for oil and electric side lights shall be provided chock shall be rounded off.



PORT SIDE LIGHT — OIL LANTERN

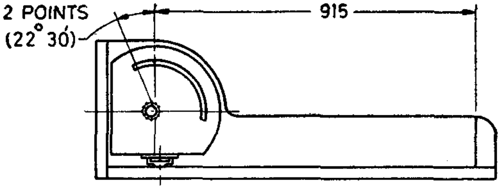


STAR BOARD SIDE LIGHT — OIL LANTERN

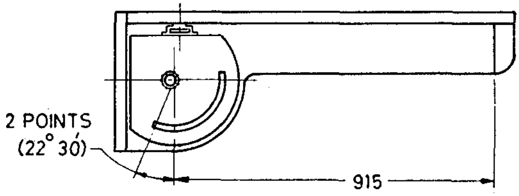


All dimensions in millimetres.

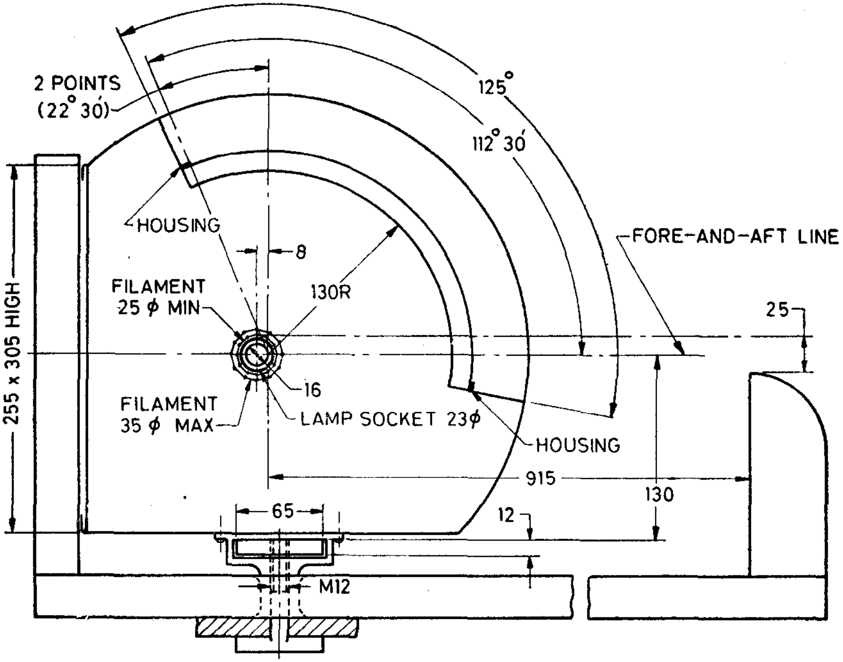
FIG. 5 OIL SIDE LIGHT SCREENING



PORT SIDE LIGHT — ELECTRIC



STAR BOARD SIDE LIGHT — ELECTRIC



All dimensions in millimetres.

FIG. 6 ELECTRIC SIDE LIGHT SCREENING

4.12 When the set screw of the cleat is screwed hard, the back of the lanterns shall fit closely against the back of the screen and the side of the lanterns shall be parallel to the side of the screen.

5. POSITIONING AND SCREENING OF STERN LIGHTS

5.1 The stern light shall be so positioned at the stern of the ship as to conform to the requirements of **5.2** and **5.3**.

5.2 The wick of an oil stern lantern shall be set as in the oil masthead lantern and so screened that a line drawn from the centre of the edge of the wick nearest the back of the lantern in a direction 67°30′ from right aft on either side shall cut the edge of the housing of the lens or plain glass front (*see* Fig. 7).

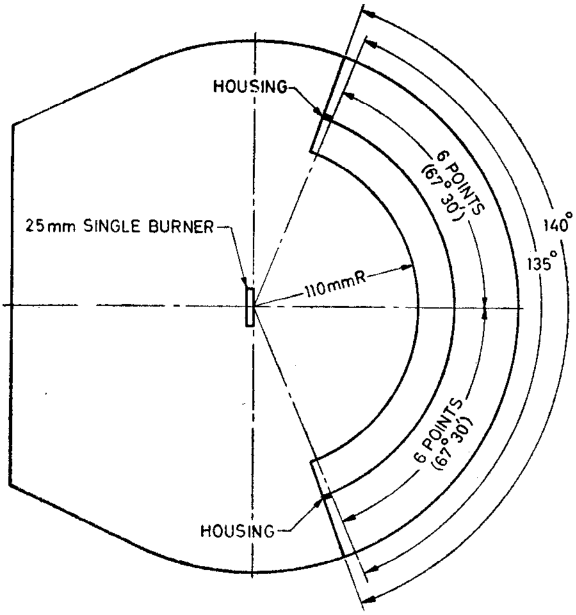


FIG. 7 OIL STERN LANTERN

5.3 The lamp socket of an electric stern lantern shall be so placed that, when the lantern is in position aboard ship, a line drawn in a direction 67°30′ from right aft on each side, being a tanget to the after half of a circle 16 mm in diameter and concentric with the lamp socket, will cut the edge of the housing of the lens or plain glass front. The centre of the lamp socket shall be 8 mm forward of the centre from which the curvature of the lens or plain glass is struck (*see* Fig. 8)

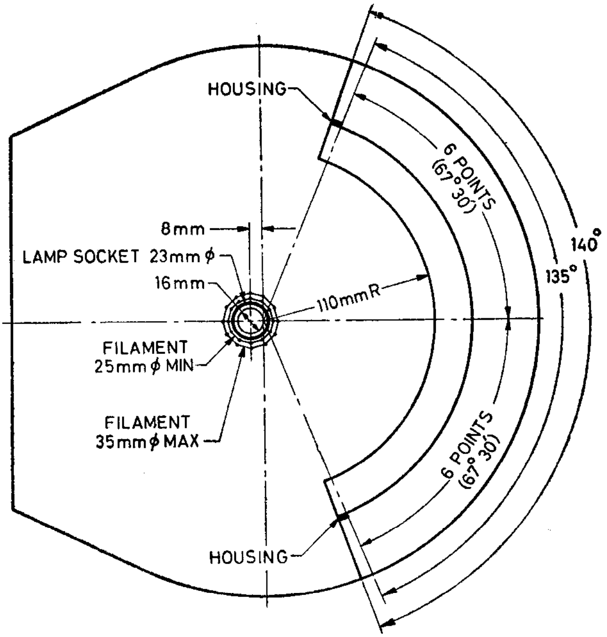


FIG. 8 ELECTRIC STERN LANTERN

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